

In the Claims:

Please cancel claims 1-46 without prejudice and add new claims 47-72 as follows:

47. (added) An apparatus for forming a lightweight concrete building unit, comprising:
a base portion forming a plurality of sides;
a lid portion pivotally attached relative to one of the plurality of sides of the base portion to allow access to the inside of the base portion;
an actuator coupled to the lid portion for opening and closing the lid portion relative to the base portion;
a slurry compression system associated with base portion configured for relatively precise compression of a slurry batch contained in the base portion to produce individual building units having substantially precise dimensions.
48. (added) The apparatus of claim 47, wherein the lid portion is pivotally attached to the base portion with at least one hinge.
49. (added) The apparatus of claim 47, further including a first sensor for detecting when the lid portion is in a closed position and a second sensor for detecting when the lid portion is in an open position.
50. (added) The apparatus of claim 47, wherein the slurry compression system is coupled to the lid portion.
51. (added) The apparatus of claim 50, wherein the slurry compression system includes an upper lifting bar to which at least one actuator is attached.
52. (added) The apparatus of claim 51, wherein the at least one actuator comprises a hydraulic lifting ram.
53. (added) The apparatus of claim 47, further including a hold down device to lock the lid portion to the base portion during the compression process.

54. (added) The apparatus of claim 53, wherein the hold down device comprises an air ram controlling a tapered hold down pin and an electronic sensor to sense when the hold down pin is properly engaged.

55. (added) The apparatus of claim 47, wherein the lid portion comprises a frame having a first side, a second side, a distal end and a proximal end, a plurality of cross-members depending from and interposed between the first side and second side defining a plurality of apertures corresponding to a plurality of chambers within the base portion, and a plurality of actuators secured to a lifter bar to raise and lower the lifter bar to precisely control compression of the slurry contained within the base portion.

56. (added) The apparatus of claim 55, wherein the compression system further includes a plurality of compression plates secured to the lifter bar, each compression plate configured to relatively closely fit within each of the plurality of chambers of the base portion but have enough clearance to allow relatively easy insertion and removal therefrom without becoming jammed within the base portion.

57. (added) The apparatus of claim 56, further including a third sensor for detecting the position of the plurality of compression plates.

58. (added) The apparatus of claim 56, wherein each of the plurality of compression plates includes external features to substantially match the contour of the inner surface of the mold to keep any substantial amount of slurry from passing between the plate and the inside surface of the mold during the compression process.

59. (added) The apparatus of claim 58, wherein each of the plurality of compression plate includes a first elongate side member and a second opposing elongate side member, a first end and a second end interposed between and depending from the sides, a plurality of cross-members interposed between and depending from the first and second side members to define a plurality of apertures, the apertures sized and shaped to fit over pillars positioned inside the mold for forming internal chambers inside the finished building units.

60. (added) The apparatus of claim 59 wherein each pillar is generally rectangular in shape and tapered from proximate a proximal end to proximate a distal end.

61. (added) The apparatus of claim 56, wherein the plurality of plates fit within the plurality of chambers of the base portion and can be raised and lowered within the chambers with the actuators a precise amount to compress slurry contained within the base portion to create a precise volume within each chamber and produce building units with relatively precise outer dimensions.

62. (added) The apparatus of claim 47, further including a block raising device for raising an at least partially cured building units from the base portion.

63. (added) The apparatus of claim 62, wherein the block raising device comprises a lower lifting bar to which a plurality of lifting arms are attached, and means for raising the lower lifting bar to raised the lifting arms in unison raising the building units formed inside the base portion.

64. (added) The apparatus of claim 63, wherein the means for raising comprises an electric motor linked to a plurality of shafts and configured for rotating the plurality of shafts, a plurality of ball screws linked to the plurality of shafts such that rotation of the motor causes rotation of the plurality of shafts and rotation of the plurality of ball screws, a plurality of collars coupled to the lifer bar, each threaded onto one of the plurality of ball screws, whereby rotation of the motor causes rotation of the shafts, rotation of the ball screws and lifting of the lifter bar in a substantially level plane.

65. (added) The apparatus of claim 62, further including a computer to control each movement of the lid portion, slurry compression system, and block raising device.

66. (added) An apparatus for forming individual lightweight building units, comprising:

a first wall and a second wall forming first and second sides of the mold;
a proximal end wall and a distal end wall;

a plurality of internal walls forming a plurality of internal chambers;
a plurality of bottom plates attached to the top of a plurality of arms, each of the plurality of bottom plates configured to fit relatively tightly within one of the plurality of internal chambers while allowing vertical movement of the plates therein, each configured to form the bottom of a building unit; and
a plurality of upper plates for compressing the slurry within each of the plurality of internal chambers.

67. (added) The apparatus of claim 66, wherein each of the plurality of bottom plates include reverse impressions of mating features to be formed in a building unit.

68. (added) The apparatus of claim 67, wherein each of the plurality of bottom plates have a perimeter configured to match the configuration of the chambers including tongue and groove features.

69. (added) The apparatus of claim 66, wherein the upper plates are actuatable for compressing the slurry within the chambers and the bottom plates are actuatable for lifting the cured building units from the chambers.

70. (added) The apparatus of claim 66, wherein the upper plates are coupled to an upper lifting bar and further including at least one actuator for raising and lowering the upper lifting bar and to control the amount of compression of slurry contained in the plurality of internal chambers.

71. (added) The apparatus of claim 66, wherein each of the end walls and internal walls include a plurality of passageways for circulating a heated fluid through the walls.

72. (added) The apparatus of claim 71, wherein each of the end walls and internal walls are comprised of a pair of panels defining internal passageways therein to circulate the heated fluid through each wall.